ENVIRONMENTAL COMPLIANCE SUMMARY

CALENDAR YEAR 1994

Introduction: Compliance Program

The mission of the West Valley Demonstration Project (WVDP) is to develop and demonstrate a safe method of solidifying high-level radioactive waste. Vitrification, the selected method, involves a complex technology that uses both radioactive and nonradioactive materials and processes, which are regulated by various federal and state laws in order to protect the public, workers, and the environment.

The U.S. Department of Energy (DOE), the federal agency that oversees the WVDP, established its policy concerning environmental protection in DOE Order 5400.1, General Environmental Protection Program. This Order lists the regulations, laws, and required reports that are applicable to DOE-operated facilities. This annual monitoring report is required by DOE Order 5400.1 and is intended to summarize environmental data gathered during the calendar year, describe significant programs, and confirm compliance with environmental regulations.

The major federal environmental laws and regulations that apply to the West Valley Demonstration Project are the Resource Conservation and Recovery Act, the Clean Air Act, the Emergency Planning and Community Right-to-Know Act, the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act, and the National Environmental Policy Act. The laws are implemented by the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) through regulatory requirements such as permitting, reporting, inspecting, and performing audits.

In addition, because the emission of radiological and nonradiological materials from an active facility can not be completely prevented, the EPA, NYSDEC, and the DOE have established exposure standards for such emissions that protect human health and the environment. The WVDP applies to NYSDEC and the EPA for permits that allow the site to release very limited concentrations of radiological and nonradiological constituents through controlled and monitored discharges of water and air. These concentrations have been determined to be not harmful to human health or the environment. The permits describe the discharge points, list the

limits on those pollutants likely to be present, and define the sampling and analysis schedule.

Inspections and audits are conducted routinely by the EPA, NYSDEC, the New York State Department of Health (NYSDOH), and the Cattaraugus County Health Department. On-site and off-site radiological monitoring in 1994 confirmed that site activities were conducted well within state and federal regulatory limits. However, several nonradiological State Pollutant Discharge Elimination System (SPDES) permit limits were exceeded. These are described in more detail under the **Clean Water Act** below. No notices of violation were issued and efforts have been made to eliminate the potential for these exceedances to recur.

Management at the WVDP continued to provide strong support for environmental compliance issues. Department of Energy Orders and all state and federal statutes and regulations are integrated into the compliance program at the Project, demonstrating a commitment to protecting the public and the environment while successfully approaching the WVDP goal of high-level radioactive waste vitrification.

A major review of the site Environmental, Safety, Health and Quality Assurance Program was conducted by the DOE Idaho Operations Office in April 1994. While areas for improvement were noted, the overall conclusion of the assessment team was that the WVDP continued to have a well-established and appropriately implemented environmental program.

The following environmental compliance summary describes the federal and state laws and regulations that are applicable to the WVDP, the relevant on-site activities that occurred during the year, and any permit compliance issues.

Compliance Status

Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act is intended to ensure that hazardous wastes are managed in a manner that protects human health and the environment. RCRA and its implementing regulations govern the management of hazardous wastes during generation, treatment, storage, and disposal. Under RCRA, the generator is responsible for the treatment, storage, and disposal of the waste.

Various federal agencies have specific responsibilities under RCRA. The EPA is responsible for issuing guidelines and regulations for the proper management of solid waste. The U.S. Department of Transportation is responsible for regulating the labeling, packaging, and spill-reporting provisions for hazardous wastes in transit.

Each DOE facility that treats, stores, or disposes of hazardous waste must apply for a permit from the EPA or the state, if authorized. The permit defines the process, the design capability, and the hazardous waste to be handled.

In 1984 the DOE notified the EPA of hazardous waste activities at the WVDP, identifying the WVDP as a generator of hazardous waste. In 1991 the WVDP filed a Part A permit application as an operator of a hazardous waste treatment and storage facility.

Because the WVDP generates, stores, and treats radioactively contaminated hazardous waste (see *Glossary*, MIXED WASTE), it has been operating under RCRA interim status. After the original permit application was filed, several modifications were made via letters to NYSDEC. In April 1991 the WVDP amended its RCRA interim status application to incorporate all these modifi-

cations. This included the addition of the hazardous waste storage lockers and specification of RCRA waste codes for contained storage units on-site. Last modified in April 1993, the WVDP's permit application continues to be updated as changes to the site's hazardous or mixed waste storage status occurs.

Under Subtitle C of RCRA, the state of New York has been authorized by the EPA to administer and enforce a radioactive mixed waste program.

Hazardous Waste Management Program

To dispose of hazardous wastes generated from on-site activities, the WVDP uses licensed transportation services to ship RCRA-regulated wastes to permitted treatment or disposal facilities. Using these services, the WVDP disposed of approximately 6,086.5 kilograms (13,418.4 lbs) of nonradioactive, hazardous waste off-site in 1994. Of this amount, 1,047 kilograms (2,308 lbs) were recycled by the disposal facilities.

Hazardous waste shipments and their receipt at designated disposal facilities are documented by signed manifests that accompany the shipment. If the signed manifest is not returned to the generator of the waste within the New York State statutory limit of twenty days from shipment, an exception report must be filed and attempts made to locate the waste. One exception report was filed in 1994. Even though the waste shipment arrived at the designated disposal facility, the facility operator did not return the manifest within the time allotted by the state of New York. The disposition of the waste was quickly determined and the manifest was forwarded as required to the EPA and NYSDEC. The facility did return the signed manifest within the federal guidelines, which are not as restrictive as the state of New York guidelines.

Hazardous waste activities must be reported to NYSDEC and the EPA every year. The report summarizes the hazardous waste activities during the previous year, lists the quantities of each waste type generated, the disposal facilities used, and the type of treatment the wastes received. The report must be filed annually as directed by New York State regulations. In addition, a hazardous waste reduction plan must be filed every two years and updated annually. This plan, which documents the efforts to minimize the generation of hazardous waste, was submitted to the EPA and NYSDEC in 1993. Updates were submitted in June 1994.

Annual inspections to assess compliance with hazardous waste regulations were conducted by NYSDEC (March 25, 1994) and the EPA (September 28, 1994). No deficiencies were noted during the inspections.

Nonhazardous, Regulated Waste Management Program

The WVDP transported approximately 36.7 metric tons (40.4 tons) of nonradioactive, nonhazardous material off-site to permitted facilities in 1994. Of this amount, 5.1 metric tons (5.6 tons) were recycled by the disposal facility. The industrial waste materials included items such as concrete, monitoring-well purge water, and neutralized acids. Some of the regulated wastes recycled included lead acid batteries and oil, which were all sent to permitted facilities. In 1994 the WVDP also shipped approximately 904 metric tons (996.4 tons) of sewage-treatment waste to a permitted wastewater treatment facility.

Radioactive Mixed Waste (RMW) Management Program

Radioactive mixed waste (RMW) contains both a radioactive constituent, which is regulated by the Atomic Energy Act (AEA), and a hazardous component, which is regulated under RCRA. Both the EPA and NYSDEC oversee radioactive mixed waste management at the WVDP. Radioactive mixed waste activities are covered under

interim status because of the hazardous waste component.

Potential conflicts between DOE Orders regarding RMW and RCRA regulations led to the WVDP initiating discussions with the regulatory agencies to resolve these conflicts. In 1992 the WVNS completed negotiations with the EPA and NYSDEC for a Federal and State Facility Compliance Agreement (FSFCA) regarding compliance with radioactive mixed waste management requirements, including RCRA land disposal restrictions (LDRs). The FSFCA also provides a plan to address storage and historical waste analysis issues at the WVDP. This agreement provides the means whereby the WVDP can comply with both RCRA regulations and with the requirements of the AEA.

The Federal Facilities Compliance Act (FFC Act) of 1992, an amendment to RCRA, was signed into law on October 6, 1992. As a result of this law, federal agencies are subject to the full range of available enforcement tools provided in federal, state, or local environmental law. A waiver of sovereign immunity became effective on October 6, 1992, except as it relates to certain mixed waste storage requirements for which the FFC Act provides a three-year delay period. During this three-year period, DOE facilities that are generating or storing mixed waste are to develop site treatment plans to identify and select options for treating and reducing their mixed waste inventories.

Site treatment plans at DOE facilities are developed in three steps:

- A conceptual site treatment plan is prepared to identify the technology needs, treatment capabilities, and existing plans and alternatives for treating mixed wastes. The WVDP's Conceptual Site Treatment Plan was submitted to New York State in October 1993 for review.

- A draft site treatment plan is then developed that evaluates the identified treatment options and the preferred method of treatment. The WVDP submitted a draft plan in August 1994.

- A final proposed site treatment plan is submitted for review and approval. The WVDP submitted the final proposed site treatment plan in March 1995. Following approval by NYSDEC, the plan will be incorporated into a consent order.

RCRA Facility Investigation (RFI) Program

The DOE and the New York State Energy Research and Development Authority (NYSERDA) entered into a 3008(h) Administrative Order on Consent under RCRA with NYSDEC and the EPA in March 1992. The Consent Order requires NYSERDA and the DOE West Valley Area Office (DOE-WV) to conduct RCRA facility investigations at thirty individual solid waste management units (SWMUs) to determine if there has been a release or if there is a potential for release of RCRA-regulated hazardous waste or hazardous constituents from SWMUs. Twenty-four of the thirty SWMUs identified in the Consent Order are being investigated by the DOE. NYSERDA is responsible for the investigation of the remaining six SWMUs.

The WVDP identified an additional eighteen SWMUs after the Consent Order was signed that are also under evaluation.

Due to the proximity of some of the units, twenty-five SWMUs were grouped into twelve super solid waste management units (SSWMUs) to assist in monitoring efforts under the RFI.

The primary goal of the RFI is to collect and evaluate information to determine which of the following actions are appropriate for each SWMU or SSWMU: no further action; a corrective measures study; or additional investigations to support one of the other actions.

The RFI addresses RCRA-regulated hazardous wastes or hazardous constituents. The WVDP has reviewed existing information; collected and analyzed more than two hundred surface soil, subsurface soil, and sediment samples; and collected and reviewed groundwater data in order to define and assess the environmental setting, unit and waste characteristics, and the potential sources and extent of nonradiological contamination.

Of the twelve SSWMUs, two — #10, the integrated radwaste treatment system (IRTS) drum cell and # 12, the hazardous waste storage lockers — have been identified as requiring no further action. The remaining ten SSWMUs are included in the RFI program to determine the appropriate actions to be taken.

The potential for releases of hazardous waste or hazardous constituents from the eighteen SWMUs identified after the Consent Order had been signed are documented in SWMU assessment reports. These reports note the function, location, and capacity of the SWMU and describe wastes that were placed in the unit and any known releases or spills. Several assessment reports have been submitted to NYSDEC and the EPA. "No further action" determinations have been received for five of these SWMUs.

Sixteen rooms previously used for nuclear fuel reprocessing operations and support were evaluated as SWMUs in the Sealed Rooms Paper Characterization Report, as required by the Consent Order. The EPA and NYSDEC have reviewed the data in the report and have issued "no further action" determinations for eight of the rooms. Additional information on the remaining eight rooms has been requested.

Waste Minimization and Pollution Prevention

The WVDP has initiated an aggressive, long-term program to reduce the generation of low-level radioactive waste, radioactive mixed waste, hazardous waste, and industrial waste as directed by Executive Order 12856. Using 1993 waste-generation rates as a baseline for comparison, the WVDP plans to reduce the generation of low-level radioactive waste, radioactive mixed waste, and hazardous waste by 50% by December 1, 1999. The generation of industrial waste will be reduced by 30% by the same date.

Reductions of 10% in each of these four waste categories were targeted for 1994. Although the target for hazardous waste reduction was missed, waste reductions for the other waste categories greatly exceeded the 10% goal. Low-level radioactive waste generation was reduced by 29%, radioactive mixed waste generation by 62%, and industrial waste generation by 21%. Hazardous waste generation was increased by 5% due to the generation of a large, nonroutine waste stream (1,941 kg of vitrification test facility condensate containing 16 ppm chromium) in December 1994.

Specific accomplishments in waste minimization and pollution prevention during 1994 included the following:

- The WVDP instituted a site-wide paper recycling program in March 1993. In 1994, 137,500 kilograms (303,200 lbs) of paper were recycled, 69% more than in 1993.
- 1,047 kilograms (2,309 lbs) of hazardous waste were recycled.
- 5.1 metric tons of nonhazardous, regulated waste were recycled in 1994.
- The dismantling of a structure in the NRC-licensed disposal area (NDA) produced 7,115 kilograms (15,686 lbs) of radioactively contaminated aluminum. After decontamination, segregation, and monitoring for radioactivity, 6,850 kg (15,102 lbs) of aluminum were staged for recycling, leaving 265 kilograms (584 lbs) to be dispositioned as radioactive

waste. The WVDP is expected to realize $5,286 from recycling the aluminum. An estimated $99,000 was saved by avoiding the cost of packaging, storing, monitoring, and disposing of 15.8 cubic meters (560 cubic feet) of radioactively contaminated metal.

- During construction of the load-in facility, which will be used to transfer canisters of vitrified, radioactive material, a diamond wire-cutting technique and conventional concrete scabbling were used to reduce the quantity of radioactively contaminated concrete from 25.1 cubic meters (887 cubic feet) to less than 0.4 cubic meters (15 cubic feet). The WVDP saved an estimated $154,000 by avoiding the costs of packaging, storing, monitoring, and disposing of the 24.7 cubic meters (872 cubic feet) of concrete.

Underground Storage Tanks Program

RCRA regulations also cover the use and management of underground storage tanks and establish minimum design requirements in order to protect groundwater resources from releases. The regulations, codified in 40 CFR 280, require underground storage tanks to be equipped with overfill protection, spill prevention, corrosion protection, and leak detection systems. New tanks must comply with regulations at the time of installation. Tanks in service on December 22, 1988 were allowed a grace period for installing the upgrades.

New York State also regulates underground storage tanks through two programs, petroleum bulk storage and chemical bulk storage. The registration and minimum design requirements are similar to those of the federal program except that petroleum tank fill ports must be color-coded using American Petroleum Institute standards to indicate the product being stored.

The WVDP stores petroleum products in three regulated, 2,000-gallon underground tanks. Two of the tanks contain unleaded gasoline. The third tank contains low-sulfur diesel fuel. Procedural controls in conjunction with metered delivery provide overfill protection and spill prevention. Leak detection requirements are met through daily tank gauging, inventory records, and monthly reconciliations of the product added, product removed, and the current contents. Tank tightness and integrity is tested annually and was last performed in December 1994. Corrosion-prevention systems must be installed before December 22, 1998 because these tanks are defined under current regulations as "unprotected." The tank fill ports are color-coded as required.

A fourth tank, a 550-gallon underground storage tank, is used to store diesel fuel for the standby power plant for the supernatant treatment ventilation blower system. This tank is filled by a metered delivery system, is monitored through daily gauging and monthly reconciliations, and is a double-walled tank with an interstitial leak detection system. The tank's fill port also is properly color-coded.

Registration for all of the tanks is renewed with NYSDEC as required. An inspection by NYSDEC on November 11, 1994 verified compliance with petroleum bulk storage regulations.

New York State-regulated Aboveground Storage Tanks

Aboveground petroleum storage is regulated by New York State petroleum bulk storage regulations under 6 NYCRR Parts 612, 613, and 614. Aboveground hazardous chemical storage is regulated by the chemical bulk storage regulations under 6 NYCRR Part 595 et seq. These regulations require secondary containment, external gauges to measure the current reserves, monthly visual inspections of petroleum tanks, and documented internal inspections. Petroleum tank fill ports must also be color-coded, and chemical tanks must be labeled to indicate the product stored.

One petroleum and five chemical bulk storage aboveground tanks were permanently closed in 1994. At the end of 1994, seven aboveground petroleum tanks and twenty aboveground chemical storage tanks were registered. Two of the petroleum tanks contain No.2 fuel oil; the remainder contain diesel fuel. Eighteen of the chemical storage tanks contain nitric acid or nitric acid mixtures. Sulfuric acid and sodium hydroxide are stored in the remaining two tanks. All of the tanks are equipped with gauges and secondary containment systems. The Quality Assurance department inspects the aboveground petroleum tanks on a monthly basis.

Medical Waste Tracking

Medical waste poses a potential for exposure to infectious diseases and pathogens from contact with human bodily fluids. Medical evaluations, inoculations, and laboratory work at the on-site nurse's office regularly generate potentially infectious medical wastes that must be tracked in accordance with NYSDEC requirements (6 NYCRR 364.9). The WVDP has retained the services of a licensed waste hauler and disposal firm to manage the medical wastes generated. Medical wastes are autoclaved by the disposal firm to remove the associated hazard and then disposed. In 1994, 29 kilograms (64 lbs) were generated and disposed. This quantity includes some wastes generated in 1993 but disposed in 1994.

Clean Air Act (CAA)

The Clean Air Act, as amended, establishes a comprehensive federal and state framework that regulates air emissions from both stationary and mobile sources: any emission source of a CAA-regulated substance may require a permit or be subject to registration or notification requirements. Industrial operations, chemical process systems, waste processing systems, and other contaminant sources with air emission points are regulated under the CAA. These point sources may exhaust to the environment through stacks, ventilators, air ducts, or wall fans. Air emissions from non-point sources such as soil piles and open lagoons also fall under CAA regulation.

Under the CAA, the EPA established programs to develop and maintain ambient air quality standards and to limit the discharge of contaminants through permitting, monitoring, and enforcement. The discharge of hazardous air pollutants is controlled through the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) program. The EPA can delegate the permitting and monitoring of air discharges to acceptable state programs. Radiological emissions, however, remain under direct control of the EPA. Other nonradiological hazardous air pollutants are regulated by the EPA, but authority to enforce those regulations has been delegated to NYSDEC.

In 1994 the WVDP initiated or maintained five permits-to-construct nonradiological air emission sources. Several of these sources also are regulated under NESHAPs. (See Table B-3 in *Appendix B*.) These sources include the cold chemical solids transfer system, the cold chemical vessel vent system, the cold chemical vessel dust collection hood, the vitrification off-gas treatment system, and the vitrification facility HVAC system. In addition, fifteen permits-to-construct were converted to certificates-to-operate. These included four scale-vitrification system emission points and eleven Environmental Analytical Annex Laboratory hood vents. The WVDP operated under a total of thirty active certificates-to-operate nonradiological emission sources and six permits for radiological emissions, regulated under the EPA's NESHAPs program. Permit applications to operate the vitrification facility HVAC system and the slurry-fed ceramic melter as radiological release points were submitted in 1993 to the EPA. NESHAPs permits are expected to be approved by 1995.

The annual inspection of the air discharges permitted by NYSDEC was conducted on June 21, 1994. The inspector indicated that the WVDP was in compliance regarding the permit renewal process, and no violations were noted. The annual inspection by EPA Region II to determine compliance with radionuclide NESHAPs requirements was conducted in August 1994 and indicated no noncompliance episodes or notices of violation. Calculations to demonstrate compliance with NESHAPs radionuclide emissions standards showed 1994 doses to be less than 1% of the 10 millirem standard.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act regulates cleanup of certain inactive hazardous waste disposal sites and response to spills of hazardous substances. The EPA collects data and ranks sites according to their potential to cause human health or environmental effects. The sites with the highest ranking are placed on the National Priority List.

On February 5, 1993 the WVDP was listed in the EPA's Federal Agency Hazardous Waste Compliance docket. This action resulted in an evaluation of the WVDP to ascertain its status relative to CERCLA requirements. On October 3, 1993, the WVDP submitted a CERCLA preliminary assessment to the EPA for review. This assessment evaluated waste management at the WVDP and the likelihood of releases and possible effects on human health and the environment. The DOE concluded in the assessment that the site does not qualify for the National Priority List, based on the score attained in the preliminary assessment and the fact that the Project facilities are currently being investigated in accordance with the provisions of the WVDP Act and the RCRA 3008(h) Order on Consent. No comments regarding the conclusions of the preliminary assessment have been received from the EPA.

Emergency Planning and Community Right-to-Know Act (EPCRA)

The Emergency Planning and Community Right-to-Know Act is an independent law enacted as Title III of the Superfund Amendments and Reauthorization Act (SARA). EPCRA was designed to create a working partnership between industry and business, state and local governments, public health and emergency response representatives, and interested citizens. It is intended to address concerns about the effects of chemicals used, stored, and released in communities as stated in the purpose of EPCRA.

The purposes of EPCRA are:

- to encourage communities to develop plans for responding to releases of hazardous substances from local facilities (Sections 301-303)
- to require facilities to provide state and local emergency planning committees, local emergency response groups, and the public with information about potential chemical hazards in their communities (Sections 311 and 312)
- to require facilities to report accidental releases of certain hazardous substances above specified reportable quantities to state emergency response commissions and local emergency planning committees (Section 304)
- to require facilities to submit an annual report to the EPA that identifies and quantifies routine releases of toxic chemicals (Section 313).

The WVDP submits reports to state and local emergency response organizations and local fire departments about quantities, locations, and any hazards associated with chemicals stored on-site. In 1994 the number of reportable chemicals

stored on-site above regulatory threshold reporting quantities was reduced from thirteen to sixteen. Chlorine, a previously reported "extremely hazardous substance," is no longer stored or used on-site.

The information on reportable chemicals is updated in quarterly reports to these agencies. These updates ensure that the public and emergency responders have the most recent information about site conditions and operations. In 1994 all reports were submitted to the appropriate organizations on time.

Clean Water Act (CWA)

The Clean Water Act is the primary statute governing water pollution control programs in the United States. It regulates discharges to surface water and groundwater through a National Pollutant Discharge Elimination System (NPDES) permit program that requires permits to be issued specifying discharge standards and monitoring and reporting requirements. Authorized states such as New York are allowed to issue equivalent State Pollutant Discharge Elimination System (SPDES) permits.

SPDES-permitted Outfalls

All WVDP point source effluent discharges to surface waters are permitted through the New York SPDES program. The WVDP has three SPDES-permitted outfalls, all of which discharge to Erdman Brook. (See Figs. 2-3 and 2-16):

- Outfall 001 (WNSP001) discharges the treated wastewater from the low-level waste treatment facility (LLWTF). The treated wastewater is held in lagoon 3 while samples are being analyzed and is periodically released upon notifying NYSDEC.

  In 1994 treated wastewater from the LLWTF was discharged in eight batches that totaled 44.7 million liters (11.8 million gal) for the year. The annual average concentration of radioactivity at the point of release was 44% of the DOE's derived concentration guides (DCGs). None of the individual releases exceeded the DCGs. (See Table B-1 in *Appendix B.*)

- Outfall 007 (WNSP007) discharges the combined effluent from the site's sewage treatment plant and various nonradioactive industrial and potable water treatment systems. The average monthly flow in 1994 was 2.8 million liters (0.7 million gal).

- Outfall 008 (WNSP008) directs groundwater flow from the northeast side of the site's LLWTF lagoon system through a french drain. The average monthly flow in 1994 was 0.36 million liters (0.094 million gal).

The site's SPDES permit, renewed on February 1, 1994, now includes additional chemical monitoring requirements and, in some cases, applies more stringent effluent limitations. A more realistic method of calculation that accounts for naturally occurring variations in iron in discharges from the site also was instituted.

A Schedule of Compliance in the permit itemized a number of major compliance actions and the required completion date for each item. Compliance actions included preparing a best-management practices plan to prevent or minimize the potential for pollutants to reach waters of the state from plant runoff, spills, or raw product storage; acquiring permits and approvals to install equipment to monitor total dissolved solids in Frank's Creek; and the start-up of the new wastewater treatment facility. A modification to the SPDES permit in November 1994 added a requirement to monitor for dissolved sulfide and manganese at outfall 001 and changed the method of calculating the BOD released. The BOD modification instituted an average daily limit for the combined discharge of outfalls 001, 007, and 008. An addition to the Schedule of Compliance included investigating

and reporting on the source and extent of groundwater contamination from the north plateau. An evaluation of alternative methods of removing the source of contamination is also required in the schedule.

SPDES permit limits exceeded in 1994 at outfalls 001 and 007 included the following:

- The daily average BOD limit of 5 mg/L in the April and September discharges was exceeded at outfall 001. The exceedance was related to growth of algae in lagoon 3, which can be held without being discharged for up to two months at a time. The dying and decaying algae in the collected samples affects the BOD measurement. Efforts are currently under way to control the growth of algae.

- Discharges from outfall 001 in May had measured pH values both below and above the acceptable range of 6.5 to 8.5 standard units. These pH fluctuations were also attributed to the growth of algae. Corrective measures to prevent a recurrence included modifying the sampling technique to obtain a more representative sample of the discharge stream and controlling algae growth. In addition, a pH meter equipped with control-limit alarms also was installed upstream of the discharge control valve.

- In September 1994, a selenium result from analysis of a grab sample of the 001 discharge was 0.0065 mg/L, which is above the limit of 0.004 mg/L. Because the discharge had been terminated prematurely, the usual composite sample could not be taken. As composite samples reflect continuous conditions and grab samples reflect immediate conditions, the exceedance probably was the result of the different sampling technique.

- In November 1994, total suspended solids were measured at 32.4 mg/L, slightly above the 30 mg/L limit. High winds were believed to have caused a resuspension of settled solids. Several BOD excursions also were reported in November 1994. However, the data associated with the November excursions are suspect: predischarge analysis did not reveal elevated results; historical results have always been lower than those reported during this period; and elevated spike recoveries by the off-site analytical laboratory show a consistent overall positive bias. Several avenues of corrective action are being pursued.

- Discharges from outfall 007 in April exceeded the BOD daily average limit of 5 mg/L and the BOD daily maximum limit of 10 mg/L on three occasions. Elevated levels of BOD were traced back to the site cafeteria grease trap. Preventive maintenance in this area is being emphasized. A biodegradable grease used to lubricate the clarifier drive chain during the period of exceedances may have also contributed to the elevated BOD results.

No notices of violation were issued as a result of any permit exceedances. Although these exceedances did not result in any significant effect on the environment, the WVDP is continuing to work closely with NYSDEC to prevent their recurrence.

Wetlands Delineation

A wetlands investigation conducted under the requirements of the Clean Water Act, Section 404, identified forty-five wetland units on a 550-acre area that includes the 200-acre WVDP site and adjacent parcels north, south, and east of the site. This area was chosen for study because it could be affected by Phase II activities. The study is part of the baseline environmental characterization that is being conducted to help plan future activities at the WVDP.

Three ecological parameters were assessed: hydrophytic vegetation, hydric soils, and wetland

hydrology. The forty-five wetland units delineated as a result of the assessment comprise 34.3 acres.

A report documenting the wetlands investigation and delineation was submitted to the Army Corps of Engineers and NYSDEC in June 1994. NYSDEC reviewed the report and inspected the site, determining that a group of eight contiguous wetlands met the criteria for regulation as a single unit. The grouped wetlands will be included on the next available proposed amendment to the official New York State Freshwater Wetlands Map for Cattaraugus County. Consequently, any applications filed to perform work within this wetland area may require prior approval by NYSDEC. The Army Corps of Engineers and NYSDEC are routinely notified of any actions planned in the site's wetland areas.

Storm Water Permit Application

Precipitation can become contaminated with pollutants from industrial process facilities, stored industrial materials, material handling areas, access roads, or vehicle parking areas. To protect the environment, aquatic resources, and public health, regulations require the collection of characteristic information and the submission of an application for a storm water discharge permit in order to ascertain the significance of releases of pollutants from storm water collection and discharge systems.

The WVDP obtained the storm water characterization data through sampling and analysis in 1991 and submitted a storm water discharge permit application to NYSDEC on September 30, 1992. In early 1994, NYSDEC indicated that any future storm water monitoring requirements would be incorporated into the WVDP's existing SPDES permit. A new storm water discharge permit application and additional sampling and analysis will be required. (See **Current Issues and Actions** below.)

Petroleum Product Spill Reporting

The WVDP has enacted a Spill Notification and Reporting Policy to ensure that all spills are properly managed, documented, and remediated in accordance with applicable regulations. This policy identifies the departmental responsibilities for spill management and illustrates the proper spill control and clean-up procedures. The policy stresses the responsibility of each employee to notify the main plant operations shift supervisor upon discovery of a spill. This first-line reporting requirement helps to ensure that spills will not go unnoticed.

Under an agreement with NYSDEC, the WVDP reports on-site spills of petroleum products of 10 gallons or less onto an impervious surface (such as blacktop) in a monthly log. Spills greater than 10 gallons that do not affect ground- or surface water or enter a drainage system must be reported to NYSDEC within twenty-four hours and entered in the monthly log. Spills of any amount that travel to waters of the state (groundwater, surface water, drainage systems) must be reported immediately to the NYSDEC spill hotline and also are entered in the monthly log.

There were seventy-three minor spills of petroleum products in 1994 totaling approximately 90.8 liters (24 gal). These spills were typically associated with leaks from employee vehicles, heavy industrial construction equipment, and vendor delivery vehicles. Of the seventy-three spills, three required immediate notification of NYSDEC under the reporting protocol. Two of the reported spills entered the storm water drainage system, but the volumes released were only 60 milliliters (2 fluid oz) and 120 milliliters (4 fluid oz). The third was a release of 38 liters (10 gal) of diesel fuel to the soil from a portable generator. The soil was immediately removed and properly disposed.

Twenty-four releases of ethylene glycol (antifreeze) from employee and contractor vehicles

were noted in the spill log. The largest release was estimated to be 0.9 liters (1 qt) of an ethylene glycol and water mixture. None of these spills entered the storm water system or were of sufficient volume to require immediate reporting.

All spills were cleaned up in a timely fashion in accordance with the WVDP Spill Notification and Reporting Policy, and the collected materials were characterized and properly disposed. None of the spills resulted in any adverse environmental effect.

Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act requires that each federal agency having jurisdiction over a federally owned or maintained public water system must comply with all federal, state, and local requirements regarding safe drinking water. The drinking water quality program in the state of New York is administered by NYSDOH through county health departments.

The WVDP obtains its drinking water from surface water reservoirs on the Western New York Nuclear Service Center (WNYNSC) site and is considered a nontransient, noncommunity public water supplier. The Project's drinking water treatment facility purifies the water by settling, filtration, and chlorination before it is distributed on-site.

As an operator of a drinking water supply system, the WVDP collects routine drinking water samples to monitor water quality. The results of those analyses are reported to the Cattaraugus County Health Department every month. Less frequent sampling and analysis for organic and inorganic parameters is also conducted and reported. The Cattaraugus County Health Department also independently collects monthly samples of WVDP drinking water to determine bacterial and residual chlorine content. The microbiological samples collected in 1994 produced satisfactory results and the free chlorine residual measurements in the distribution system were positive on all occasions, indicating proper disinfection.

In 1993 and 1994 the WVDP conducted sampling and testing for lead and copper in the site's drinking water in accordance with EPA and NYSDOH regulations. The analytical results to date show lead levels to be above the action level of 15 μg/L at several locations in the distribution system. Consequently, regulations require an evaluation of potential water treatment actions and the preparation of a Corrosion Control Plan. This was submitted in March 1994 to the Cattaraugus County Health Department. The plan included recommendations for controlling lead and copper levels in the water distribution system. The WVDP is currently considering how best to implement the program to reduce the level of those metals in the treated water.

Employees at the WVDP are made aware of the elevated lead levels through a public education program. Though not required, notices have been posted at locations where elevated lead levels were measured advising employees not to consume water from that location.

Other than the lead action-level exceedance noted above, monitoring results in 1994 indicate that the Project's drinking water meets NYSDOH drinking water quality standards.

The Cattaraugus County Health Department conducted its annual inspection of the WVDP water supply system on November 1, 1994. No detrimental findings or notices of violation were issued.

There were several changes in the 1994 site drinking water program:

- A temporary clarifier was installed while a new clarifier is being constructed.
- Quarterly monitoring of drinking water for nitrates and nitrites was completed with satis-

factory results, allowing the Cattaraugus County Health Department to reduce the sampling frequency to once a year.

- Plans to install a new potable water storage tank were approved.

- During the annual inspection in November the water supply was assessed for its vulnerability to contamination from synthetic organic chemicals. The Cattaraugus County Health Department determined that initial monitoring requirements will be satisfied upon collection and analysis of one sample in August 1995. Quarterly sampling and analysis may be waived upon receipt of satisfactory results from the August sampling.

- NYSDEC flood control personnel inspected the water reservoir dams, which were found to be in satisfactory condition.

Toxic Substances Control Act (TSCA)

This act regulates the manufacture, processing, distribution, and use of chemicals, including PCBs (polychlorinated biphenyls). In 1994 the WVDP continued to manage radioactively contaminated PCB waste as mixed hazardous and radioactive wastes because PCBs are a listed hazardous waste in New York State. These wastes originated from a dismantled hydraulic power unit inside the former reprocessing facility and from several radiologically contaminated PCB capacitors containing PCB fluids. To comply with TSCA, the WVDP maintains an annual document log that details PCB use and storage on-site and any changes in storage or disposal status. The document log also lists several in-service PCB articles, including capacitors, a transformer, and several electrical bushings.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act establishes the nation's policies for the protection of the environment. Its goals are to prevent or eliminate potential damage to the environment that could arise from federal legislative actions or proposed federal projects. The President's Council on Environmental Quality, established by NEPA, carries out this policy. Implementing regulations are found in the Code of Federal Regulations (CFR), Title 40, Parts 1500-1508 (40 CFR 1500-1508). Since 1990 the DOE has been revising its NEPA-compliance program, which was approved by the President's Council on Environmental Quality and was codified in 10 CFR 1021. This regulation went into effect on May 26, 1992.

NEPA requires that all federal agencies proposing major actions that could significantly affect the quality of human health and the environment prepare detailed environmental statements.

The DOE implements NEPA by requiring an environmental review of all proposed activities. If a proposed action will have an insignificant effect on the environment it is excluded from further environmental review under a categorical exclusion. If a proposed action could have an effect on the environment, then it is reviewed through an environmental assessment. If the results of the assessment indicate no significant effect on the environment, then a "finding of no significant impact" is issued. A proposed action that could have a significant effect on the environment is reviewed through an environmental impact statement.

Both environmental assessments and environmental impact statements are made available to the public. NEPA requires that the public be notified of and given the opportunity to review and comment on environmental impact statements. In 1993, the Secretary of Energy established guidelines that provide

for public review and comment on environmental assessments.

1994 NEPA Activities

Seventeen proposed actions regarding facility maintenance and operation were evaluated under the Department of Energy's NEPA-implementing regulations during 1994. The proposed actions included activities such as dismantling the original meteorological tower, WVDP site characterization, and routine environmental monitoring activities. Thirteen of the seventeen proposed actions were categorically excluded. Four are eligible for categorical exclusion and are awaiting approval.

Two draft environmental assessments were prepared during 1994. The first assessment evaluated the construction and operation of a contaminated soil consolidation area to provide temporary storage of low-level radiologically contaminated soil that has been excavated at the WVDP.

The second environmental assessment evaluated a proposal for the off-site, commercial treatment of Class A low-level radioactive waste and low-level radioactive mixed waste generated at the WVDP. This proposal involves the shipment of the waste from the WVDP to a commercial facility for volume-reduction and return of the waste to the WVDP. The objective of this proposal is to maximize the use of existing storage facilities at the WVDP and to minimize the construction of new facilities.

Alternatives for the final disposition of the remaining spent nuclear fuel assemblies at the WVDP are being evaluated in a Programmatic Environmental Impact Statement for Spent Nuclear Fuel Management and Environmental Restoration and Waste Management Program at the Idaho National Engineering Laboratory. This environmental impact statement would provide NEPA documentation to support removal of the spent fuel from the WVDP and interim storage at another location.

Preparation of the draft environmental impact statement for Project completion by the DOE and closure or long-term management of facilities at the WNYNSC by NYSERDA continued in 1994. Six alternatives have been developed and are being evaluated. The draft environmental impact statement is scheduled for public review in 1995.

Summary of Permits

Environmental permits in effect at the Project during 1994 are listed in Table B-3 of *Appendix B*.

Current Issues and Actions

RCRA Facility Investigation

Identifying and evaluating all SWMUs at the WVDP is continuing in order to comply with the requirements of the RCRA Administrative Order on Consent. The potential for the release of hazardous wastes or constituents from the SWMUs is being evaluated and includes review of historical process knowledge, soil and sediment sampling and analysis results, and review of groundwater monitoring results. Additional investigations, if necessary to appropriately characterize individual SWMUs, may be conducted in the future.

The data from the investigations is compiled and presented in assessment reports that are prepared for newly identified SWMUs or in RCRA facility investigation (RFI) reports that are prepared for SWMUs identified in the Consent Order. The reports present collected information on the environmental setting, SWMU and waste characteristics, potential sources, and the environmental analytical results. The reports also recommend which of the following actions are appropriate: no further action, a corrective measures study, or additional investigations to support one of the other actions. EPA and NYSDEC

concurrence with the report conclusions is requested, but additional information may be required to support the recommendations.

The current focus of the RFI program is on preparing and submitting scheduled SWMU assessment and RFI reports to the EPA and NYSDEC in 1995 and 1996.

Clean Water Act

SPDES Permit

The SPDES permit was renewed in February 1994 and modified in April and November. The permit and modifications included some changes to the parameters monitored and the monitoring methods. Adjustments have been made to the sampling and analysis program to accommodate the new requirements.

The renewed and modified permit also presented a Schedule of Compliance, listing actions to be completed and the due date for completion. One of the compliance actions included installing a flow augmentation device and flow measurement system in Frank's Creek to determine and maintain compliance with a new permit limit for total dissolved solids in the stream. The action also involved obtaining approvals of system construction and installation from several regulatory agencies such as NYSDEC and the Army Corps of Engineers. To date, regulatory approvals and the design of the flow monitoring and augmentation system have been completed, a contract has been placed for system installation, and construction is planned for mid-1995.

Groundwater Investigation

An increasing trend in gross beta radioactivity in water seeping from a localized area of wet ground northeast of the process building was identified in December 1993. Follow-up sampling and analysis in that vicinity has resulted in the identification of a groundwater seep location that has contributed a significant portion of the radioactivity originating from the Project premises in water releases from monitoring point WNDMPNE. Strontium-90 is the primary isotope responsible for the elevated gross beta levels.

An investigation to determine the nature and extent of the groundwater contamination plume, identify the source, and evaluate alternatives that will reduce the source of the contamination was also listed as a compliance action in the SPDES permit. To comply with the action requirements, the subsurface plume was investigated and potential sources were identified. At this time, the primary source of contamination appears to be an area in the southwest corner of the process building associated with acid recovery operations conducted by the previous site operator during fuel reprocessing.

To mitigate the release of radioactivity, the WVDP obtained and put in place a portable ion exchange system. This unit is capable of removing the radioactive contaminants and was intended to discharge through outfall 001. However, before it could be put into operation, the groundwater seep had subsided and no water was treated in 1994.

Currently, an evaluation of more comprehensive treatment techniques is under way. An interim mitigative measure may be undertaken in calendar year 1995 to contain contaminants at the leading edge of the contaminant plume.

Storm Water Permitting

An application for an individual permit for storm water discharges associated with industrial activity was submitted in 1992. The application included characteristic analytical results from sampling conducted at three locations in 1991. These monitoring locations comprised all storm water discharged from the WVDP but also included continuous base flows at the sample points. NYSDEC requested that the sampling

points be moved to locations with no base flow to allow only the quality of the storm water discharges to be monitored. In response to the request, thirty-two on-site monitoring points were identified in 1994. Clean Water Act regulations allow petitioning to group substantially identical discharges for monitoring and reporting. NYSDEC accepted the WVDP's petition to group several of the discharge points. As a result, eleven storm water outfalls are scheduled for monitoring in 1995.

For storm water monitoring two samples are to be collected from each outfall: a first-flush sample collected within the first half-hour of the storm event and a flow-weighted composite collected during the first three hours of the storm event. Storm water samples will be analyzed for parameters identified in the existing SPDES permit.

Project Assessment Activities in 1994

As the management and operating contractor for the DOE at the WVDP, West Valley Nuclear Services Company, Inc. (WVNS) conducted more than 130 reviews of environmentally related activities in 1994. These included 3 assessments, 1 audit, 104 surveillances, and 26 line-management self-assessments. In addition, 20 reviews were conducted by organizations external to WVNS such as the DOE, NYSDEC, and the EPA. Overall results of the reviews reflect continuing, well-managed environmental programs at the WVDP.

Significant external environmental overview activities in 1994 included a comprehensive Environmental, Safety, Health and Quality Assurance combined functional appraisal by the DOE Idaho Operations Office, a routine annual inspection by the EPA and NYSDEC for compliance with NESHAPs, inspections by the EPA and NYSDEC for compliance with RCRA, an inspection by NYSDEC for compliance with SPDES requirements, and an annual inspection of the WVDP's potable water supply system by the Cattaraugus County Health Department. These appraisals and inspections did not reveal any environmental program findings and further demonstrated the WVDP's commitment to environmental compliance.

Inspections by the U.S. Department of Transportation (DOT) and the New York State Department of Transportation regarding waste shipments from the WVDP were conducted in 1994. Shipment of wastes must comply with U.S. DOT regulations that require the generator to use appropriate packaging, marking, and labeling and to prepare shipping documents, i.e., hazardous waste manifests. The hazardous waste manifests must identify the material being shipped and list the telephone number of a person with comprehensive emergency response and accident mitigation information or someone who has immediate access to a person with that information. The telephone number must be monitored twenty-four hours a day. Periodic inspections determine whether shipping facilities are in compliance with these regulations.

The U.S. DOT and the New York State DOT jointly inspected the WVDP on July 19, 1994 and October 25, 1994. During the July inspection a finding was identified when the inspector was inadvertently disconnected while trying to verify the phone number for spill response assistance that was listed on a recent waste manifest. To ensure that a similar incident would not recur, security personnel monitoring the WVDP telephones were rebriefed on the notification process and waste shipment operating procedures were modified. The WVDP also ensured that other recommendations were being followed, including internal reviews, adequate training, and proper completion of hazardous material shipping papers. The WVDP sent a letter, as requested, to the U.S. DOT describing the actions taken in response to the inspection.

The October inspection did not identify any findings.

1994 U.S. Department of Energy Audit

A comprehensive Environmental, Safety, Health and Quality Assurance functional appraisal was conducted by the DOE Idaho Operations Office from April 18, 1994 through April 22, 1994. The audit team evaluated environmental programs, construction safety, fire protection, nuclear safety, emergency preparedness, conduct of operations, radiological controls, industrial hygiene, firearms safety, and transportation programs. Performance-based criteria were used in assessing the overall effectiveness of the evaluated programs. The appraisal identified a total of eleven findings, twenty-three observations, and four concerns. WVNS responded to the audit items in an action plan submitted to the DOE on September 9, 1994. All items not resolved in the action plan are tracked through closure in the WVNS Open Items Tracking System. Currently, five items relating to this audit remain open. No deficiencies were found that represented conditions or actions posing a significant threat to public health or the environment.

Follow-up to the Department of Energy 1992 Environmental Audit

In November 1992, the U.S. Department of Energy Idaho Operations Office performed a combined functional appraisal of the WVDP. The appraisal team reviewed the WVDP environmental protection, quality assurance, emergency preparedness, and firearms safety programs. After receiving a final appraisal report from the Idaho Operations Office in December 1992, the WVDP issued its final action plan addressing DOE concerns on February 25, 1993. More than 80% of these concerns have been resolved by WVNS. Almost all of the remaining action items are long-term commitments related to continuing self-assessment.

Follow-up to the U.S. Department of Energy 1991 Environmental Audit

In March 1992, the WVDP received the final report by the DOE Headquarters Office of Environmental Audit on the 1991 environmental audit. The WVDP completed its final action plan and resubmitted it to DOE Headquarters in April 1992. As of December 1994 all of the identified action items had been resolved and are awaiting formal closure.